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IS 13229 (1991): Zinc for galvanizing [MTD 9: Lead, Zinc, Cadmium, Tin, Antimony and their Alloys]

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IS 13229 : 1991

भारतीय मानक

जस्तीकरण के लिए जस्ता — विशिष्ट

Indian Standard

ZINC FOR GALVANIZING — SPECIFICATION

UDC 669·5 : 669·58

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

November 1991 Price Group 1

Lead, Zinc, Cadmium, Tin, Antimony and Their Alloys Sectional Committee, MTD 9

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Lead, Zinc, Cadmium, Tin, Antimony and Their Alloys Sectional Committee had been approved by the Metallurgical Engineering Division Council.

Galvanizing is one of the important means for corrosion protection of steel and steel products and 70% of zinc produced in the country is consumed in galvanizing, followed by dry batteries (10%) and others (20%). A need was, therefore, felt to formulate separate standard for zinc for galvanizing.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

AMENDMENT NO. 1 APRIL 1998
TO
IS 13229 : 1991 ZINC FOR GALVANIZING — SPECIFICATION

(*Page* 1, *clause* 1) — Substitute the following for the existing clause:

'1 SCOPE

1.1 This standard covers the requirement of Zinc used for galvanizing.'

(*Page* 1, *clause* 2) — Substitute 'IS 1387 : 1993 General requirements for metallurgical materials (*second revision*)' *for* 'IS 1387 : 1967 General requirements for the supply of metallurgical materials (*first revision*)'.

(*Page* 1, *clause* 3) — Substitute following for the existing clause:

'This standard covers two grades of zinc, namely Zn 98.5 and Zn 98.0.'

(*Page* 1, *clause* 4.1) — Substitute 'IS 1387 : 1993' *for* 'IS 1387 : 1967'.

(*Page* 1, *Table* 1) — Substitute the following for the existing table :

Table 1 Chemical Composition of Zinc for Galvanizing
(*Clause* 6.1)

Constituent	Requirements, Percent by mass	
	Grade Zn 98.5	Grade Zn 98.0
(1)	(2)	(3)
Zinc, *Min*	98.5	98.0
Lead, *Max*	1.40	1.60
Cadmium, *Max*	0.05	0.2
Iron, *Max*	0.05	0.05
Tin, *Max*	0.02	0.02
Copper, *Max*	0.02	0.02
Total impurities, *Max*	1.5	2.0

NOTE — The possible presence of other unnamed elements is not precluded. However, analysis shall regularly be made only for the elements (except zinc) listed in the table. The zinc content shall be determined by difference between the sum of total elements analyzed and 100. By agreement between manufacturer and the purchaser, limits may be established for other elements.

(*Page* 2, *clause* **12.2**) — **Substitute the following for the existing clause:**

‘12.2 Standard Marking

12.2.1 The material may also be marked with the Standard Mark.

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers, may be obtained from the Bureau of Indian Standards.’

(MTD 9)

Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 2 MAY 2003
TO
IS 13229 : 1991 ZINC FOR GALVANIZING — SPECIFICATION

[*Page* 1, *Table* 1 (*see also Amendment No.* 1)] — Substitute the following table for the existing:

Table 1 Chemical Composition of Zinc for Galvanizing
(*Clause* 6.1)

Sl No.	Constituent	Grade Zn 98.50%
(1)	(2)	(3)
i)	Zinc, *Min*	98.50
ii)	Lead, *Max*	1.25
iii)	Cadmium, *Max*	0.02
iv)	Iron, *Max*	0.02
v)	Tin, *Max*	0.02
vi)	Copper, *Max*	0.02

NOTE — Other impurities do not preclude the possible presence of other unnamed elements. However, analysis shall regularly be made only for the impurities listed in the table. The zinc shall be determined by difference between the sum of total elements analyzed and 100 percent. By agreement between the manufacturer and the purchaser, analysis may be required and limits established for elements not specified.

(MTD 9)

Reprography Unit, BIS, New Delhi, India

Indian Standard

ZINC FOR GALVANIZING—SPECIFICATION

1 SCOPE

This standard specifies the requirements for 98·50 percent zinc used for galvanizing.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

IS No.	*Title*
1387 : 1967	General requirements for the supply of metallurgical materials (*first revision*)
1817 : 1961	Method of sampling non-ferrous metals for chemical analysis
2600 : 1964	Methods of chemical analysis of high purity zinc and zinc base alloys for die casting.
8816 : 1978	Method for selection and preparation of samples for spectrographic analysis of zinc and zinc alloys.

3 GRADE

This standard covers only one grade of zinc, namely Zn 98·50.

4 SUPPLY OF MATERIAL

4.1 General requirements relating to the supply of zinc shall conform to IS 1387 : 1967.

4.2 Zinc shall be supplied in the form of ingots. If specified by the purchaser, it may also be supplied in the form of slab, tile or plate.

5 MANUFACTURE

The zinc shall be manufactured by any process from one or from other zinc bearing materials. The manufacturer should take adequate care to ensure that the zinc produced is of uniform quality and conform to the requirements of this standard.

6 CHEMICAL COMPOSITION

6.1 The material shall conform to the chemical composition as specified in Table 1.

6.2 The chemical composition shall be determined either by the method specified in relevant parts of IS 2600 or any other established instrument/chemical method. In case of dispute the procedure specified in relevant parts of IS 2600 shall be the referee method.

Table 1 Chemical Composition of Zinc for Galvanizing

(*Clause* 6.1)

Constituent	**Grade Zn 98·50** %
Zinc, *Min*	98·50
Lead, *Max*	1·25
Cadmium, *Max*	0·05
Iron, *Max*	0·05
Tin, *Max*	0·02
Copper, *Max*	0·02
Total impurities including above, *Max*	1·50

NOTE — Other impurities do not preclude the possible presence of other unnamed elements. However, analysis shall regularly be made only for the impurities listed in the table. The zinc shall be determined by difference between the sum of total elements analysed and 100 percent. By agreement between the manufacturer and the purchaser, analysis may be required and limits established for elements not specified.

7 FREEDOM FROM DEFECTS

The surface of ingots shall not show any pipes, oxides, inclusions, dross, slag or foreign matters and shall be clean. On fracture no inclusion or foreign matter shall appear at the section of breakage.

8 SHAPE AND MASS

8.1 Unless specified otherwise, the mass of each ingot shall be not more than 30 kg.

8.2 When zinc is supplied in any form other than ingot, that is, slab, tile or plate, the mass of the same shall be mutually agreed to between the purchaser and the manufacturer.

8.3 Ingots may have a shape which permits stacking and may include notches which allows them to be broken up into small pieces.

8.4 Certain ingots may include cast on feet, with a view to facilitating the handing of stacks of ingots.

9 SAMPLING

9.1 Unless otherwise agreed to between the purchaser and the manufacturer, five percent of ingot shall be selected from each consignment of metal produced under uniform conditions of manufacture offered for inspection at one time.

9.2 The method of preparing samples for chemical and spectrographic analysis from ingots selected under **9.1** shall be in accordance with IS 1817 : 1961 and IS 8816 : 1978 respectively.

10 RETESTS

If the sample prepared under **9.2** fails to meet the requirements specified under **6.1**, two more tests shall be conducted on the same sample in order to confirm that the analysis has been done properly. If both the test results satisfy the relevant requirements, the lot shall be accepted. Should either of the retests fail the lot represented shall be deemed as not complying with this standard.

11 INSPECTION

11.1 All inspection and testing of material described in this standard shall be carried out by the manufacturer unless otherwise agreed to between the manufacturer and the purchaser. The inspection requirements shall be stated in the enquiry and order.

11.2 The purchaser shall notify the supplier while placing the order, if it is his intention to inspect the material at the supplier's end. The supplier shall offer the purchaser all the necessary facilities for testing of the material in accordance with this standard. For the purpose, the purchaser or his representative may, by prior arrangement, attend to inspect the material, to select and identify the test samples and to witness the testing.

12 MARKING

12.1 Each ingot, slab, tile or plate shall be legibly marked with:

a) cast/lot number; and

b) indication of the source of manufacture.

12.2 The material may also be marked with the Standard Mark.

13 TEST CERTIFICATE

The supplier shall provide test certificate for each consignment giving information like cast/lot, number corresponding chemical composition, etc.

Standard Mark

The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use oft he Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

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